

On the Rotatoria of the Neighbourhood of Tübingen.

By SAMUEL BARTSCH.

The author notices the species of Rotatoria obtained by him in the neighbourhood of Tübingen, mentioning any peculiarities observed by him, and discussing the views of previous authors. He commences with a sketch of the bibliography of the subject, in which the principal authorities are mentioned, and then gives a general account of the structure of the animals belonging to this class, which forms a useful summary of our present knowledge. With regard to the systematic position of the Rotatoria, the author adopts Häckel's notion, according to which they belong to the great Articulate stem, forming a small branch from the same point whence the two great branches of the Vermes and Arthropoda diverge.

As the author establishes three new families and one new genus, we here give an abstract of his classification.

(Order) I. ENTERODELA.

With a stomach, intestine, and anus.

Fam. 1. *Floscularinæ*, Bartsch.

(= *Tubicolarina*, Carus, = *Monotrocha* and *Schizotrocha*, Ehrenb.)

Form clavate; foot long, annulated; ciliary organ like the corolla of a flower; usually sedentary animals, placed in a sheath. There appears to be no reason for giving a new name to this group:

The author notices species of *Floscularia* and *Melicerta*. Of the former he states that the rotary organ is always five-lobed, and that the cilia move during the unfolding of the lobes or when a living organism approaches them. The habits of *Melicerta ringens* are described at considerable length.

Fam. 2. *Hydatinæ*, Ehr. (s. str.).

Body-envelope saccular, soft, varying in form from cylindrical to conical; foot and its terminal styles short, in part not retractile. Genera noticed: *Hydatina*, *Pleurotrocha*, *Syncheta*, *Notommata*, and *Diglena*.

In *Hydatina senta* the author finds attached to the brain, at the points where the nerves running to the two cervical palpi are given off, two *pedunculate vesicles*, consisting of a very thin envelope enclosing finely granular contents, in which about half a dozen orange-red globules are suspended. During the movements of the animal, these vesicles oscillate to and fro; and the author suggests that they may be auditory vesicles. The cilia on the interior of the rotary organ extend down to the gizzard. *Eosphora* (Ehr.) is combined with *Notommata*, as by Leydig.

Fam. 3. *Longisetæ*, Bartsch.

Skin soft or firm; body varying in form from cylindrical to oval; foot very much reduced; terminal styles one or two, long, setiform.

Including the genera *Distemma*, *Rattulus*, *Furcularia*, and *Monocerca*, and a new genus,

Monommata, with a cylindrical body, a partially hardened skin, two long caudal points, and one cervical eye. Species *Notommata tigris* and *longiseta*, Ehr.

Fam. 4. **Scaridina**, Carus.

Foot long-jointed, frequently with long spines and points, not retractile; skin soft or hardened. Genera *Scaridium* and *Dinocharis*.

Fam. 5. **Philodinæa**, Ehr.

Body fusiform; foot retractile like a telescope, forked at the end; one cervical movable palpus. Genera: *Callidina*, *Philodina*, *Rotifer*, and *Actinurus*.

Fam. 6. **Loricata**, Bartsch.

(= *Brachionea*, Carus, = *Euchlanidota* and *Brachionæa*, Ehr. — *Dinocharis*.)

With a hard carapace sharply separated from the head and foot; soft parts retractile. Genera observed: *Euchlanis*, *Lepadella*, *Metopidia*, *Brachionus*, *Monostyla*, *Pterodina*, *Anuræa*, *Salpina*, and *Colurus*.

(Order) II. **GASTERODELA.**

Fam. 7. **Ascomorpha**, Perty.

Body short, cylindrical, truncated in front, rounded off behind; no intestine or anus; one cervical eye.

Under the genus *Ascomorpha* (Perty) the author describes a new species, which he calls *A. saltans*.—*Württemb. naturw. Jahreshfte*, xxvi. pp. 307-364.

On the Blood and Blood-corpuscles of Insects and some other Invertebrata. By Dr. V. GRABER.

The blood-corpuscles of Insects and many other Arthropoda (*Epeira*, *Phalangium*, *Oniseus*, *Julus*, *Lithobius*) present extraordinary differences, especially with respect to their relative number, size, and form, even in one and the same individual. As regards form, they show all possible transitions, from a slender sigmoid or horseshoe-shaped spindle to biconvex or sometimes perfectly flat, thin, circular disks. Proteiform corpuscles also appear, although only exceptionally. Their size, or, more properly, the measurement of their longest diameter, is equally variable. It is usually from 0.008 to 0.02 millim., but also may be less (as in *Cossus ligniperda*), or it may attain the gigantic dimensions of 0.04 millim., or even more (in species of *Asilus*).

Many phenomena (for example, on the addition of water), however, indicate that the majority of the blood-corpuscles observed in the same specimen possess nearly the same volume, and that the various forms in which they appear are for the most part caused by the very narrow courses through which they have to pass in some places,